

We claim:

1. An image capturing device, comprising:
an electronic image sensor;
a memory including a dark frame buffer that stores one or more dark frames generated by said electronic image sensor; and
a processor communicating with said electronic image sensor and said memory, with said processor controlling said electronic image sensor to substantially continuously capture and store a newest dark frame from said electronic image sensor when said electronic image sensor is not performing an image capture and subtracting said newest dark frame from an image upon an image capture.
2. The image capturing device of claim 1, wherein said dark frame buffer comprises a circular buffer.
3. The image capturing device of claim 1, wherein said dark frame buffer stores a plurality of dark frames.
4. The image capturing device of claim 1, wherein said image capturing device comprises a digital still camera.
5. The image capturing device of claim 1, with said memory further being capable of storing one or more images captured by said electronic image sensor.

6. The image capturing device of claim 1, wherein said memory further includes a capture mode variable that indicates when said image capturing device is capturing an image.

7. The image capturing device of claim 1, wherein said memory further includes a preview mode variable that indicates when said image capturing device is operating in a preview mode.

8. The image capturing device of claim 1, wherein said memory further includes a preview mode variable that indicates when said image capturing device is operating in a preview mode and wherein said processor interrupts said preview mode in order to capture a dark frame.

9. The image capturing device of claim 1, wherein said memory further includes a preview mode variable that indicates when said image capturing device is operating in a preview mode and further includes a dark frame preview timer, wherein said processor interrupts said preview mode upon expiration of said dark frame preview timer in order to capture a dark frame.

10. A noise reduction method for an electronic image sensor of an image capturing device, comprising the steps of:

substantially continuously capturing a newest dark frame in said electronic image sensor when said electronic image sensor is not performing an image capture;

storing said newest dark frame; and

subtracting said newest dark frame from an image upon an image capture;

wherein said subtracting reduces noise in said image.

11. The method of claim 10, wherein said storing of said newest dark frame replaces an oldest stored dark frame.

12. The method of claim 10, wherein said newest dark frame is calculated into a sliding average of captured dark frames.

13. The method of claim 10, further comprising the preliminary step of checking whether said image capturing device is in a preview mode, wherein the capturing, storing, and subtracting steps occur when said image capturing device is not in said preview mode.

14. The method of claim 10, further comprising the preliminary steps of:

checking whether said image capturing device is in a preview mode, wherein the capturing, storing, and subtracting steps occur when said image capturing device is not in said preview mode;

stopping said preview mode if said image capturing device is in said preview mode in preparation for said capturing and storing steps; and

resuming said preview mode after said capturing and storing steps.

15. The method of claim 10, further comprising the preliminary steps of:

checking whether said image capturing device is in a preview mode, wherein the capturing, storing, and subtracting steps occur when said image capturing device is not in said preview mode;

checking a dark frame preview timer; and

stopping said preview mode if said image capturing device is in said preview mode and if said dark frame preview timer is expired.

16. A noise reduction method for an electronic image sensor of an image capturing device, comprising the steps of:

- checking whether said image capturing device is in a preview mode;
- checking a dark frame preview timer if said image capturing device is in said preview mode;
- stopping said preview mode if said image capturing device is in said preview mode and if said dark frame preview timer is expired;
- capturing a newest dark frame in said electronic image sensor if said electronic image sensor is not performing an image capture and if said preview mode is not active;
- storing said newest dark frame; and
- subtracting said newest dark frame from an image upon an image capture;

wherein said subtracting reduces noise in said image.

17. The method of claim 16, wherein said storing of said newest dark frame replaces an oldest stored dark frame.

18. The method of claim 16, further comprising the preliminary step of checking whether said image capturing device is in a preview mode, wherein the capturing, storing, and subtracting steps occur when said image capturing device is not in said preview mode.

19. The method of claim 16, further comprising the preliminary steps of:

checking whether said image capturing device is in a preview mode, wherein the capturing, storing, and subtracting steps occur when said image capturing device is not in said preview mode; and

stopping said preview mode if said image capturing device is in said preview mode.

20. The method of claim 16, wherein the step of stopping said preview mode comprises closing an image capturing device shutter.

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